

AMENDMENTS TO THE SPECIFICATION

On page 4, please amend paragraph [0015] as follows:

[0015]

Fig. 1 is a diagram showing the structure of an embodiment of the present invention.

Fig. 2 is a diagram showing the structure of a chromatographic separation device that uses a plurality of columns.

Fig. 3 is a graph showing the state of gas flow at the outlet of the first column.

Fig. 4 is a graph showing the state of gas flow at the outlet of the second column.

Fig. 5 is a diagram showing the structure of a chromatographic separation device that uses a plurality of columns single column containing a plurality of fillers.

Fig. 6 is a graph showing the state of gas flow at the outlet of the column shown in Fig. 5.

Fig. 7 is a diagram showing the structure of a test unit.

Fig. 8 is a diagram showing the structure of another test unit.

On page 5, please amend paragraph [0017] as follows:

[0017]

A PFC gas is supplied to a production process 10 such as an etching or thin film formation process conducted at a semiconductor production plant. As a result, an exhaust gas containing the PFC gas is produced. An inlet for a suction pump 12 is connected to the path of the exhaust gas, and the exhaust gas containing the PFC gas is extracted from the production process 10 by this suction pump 12. Gases such as CF₄, NF₃, ~~C₂F₄~~, ~~C₂F₆~~, and SF₆ can be used as the PFC gas, and in this embodiment, the PFC gas contains CF₄, C₂F₆, and NF₃. Because the PFC gas decomposes and generates hydrofluoric acid during the production process 10, the exhaust gas also contains hydrofluoric acid. As a result, if the exhaust gas is introduced directly into the suction pump 12, then there is a danger that the suction pump 12 may be damaged. Furthermore, the exhaust gas also contains metals generated during etching and the like, meaning if the exhaust gas is introduced directly into the suction pump 12, there is a danger that

deposits may accumulate inside the suction pump 12. Accordingly, nitrogen (N₂) gas is supplied as a diluent gas at a point prior to the exhaust gas reaching the suction pump 12, thereby diluting the exhaust gas.

On page 12, please amend paragraph [0039] as follows:

[0039]

For CF₄ and C₂F₆, the maximum molecular diameter, calculated on the basis of the F-F internuclear distance and the F electron cloud radius of 0.133 nm, is 0.4445 nm for CF₄ and 5.69 nm for C₂F₆. For example, the maximum molecular diameter for CF₄ is determined using the equation 0.1785 (the F-F internuclear distance) + 0.133 × 2 (two F).

On page 15, please amend paragraph [0052] as follows:

[0052]

The test results confirmed that by using a pulsed introduction of gas, the respective peaks for the CF₄ + NF₃ mixture and C₂F₆ had completely separated by reaching the outlet of the first column 50-1, meaning that by simply selecting the sampling period, a CF₄ + NF₃ mixed gas and pure C₂F₆ could be obtained. Accordingly, the C₂F₆ was extracted, and the CF₄ + NF₃ mixed gas was fed into the test second column 50-2. As a result, it was found that at the outlet of the second column 50-2, the CF₄ and NF₃ had separated by the time of discharge.